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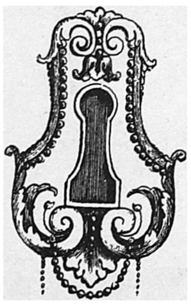
ART IN METAL

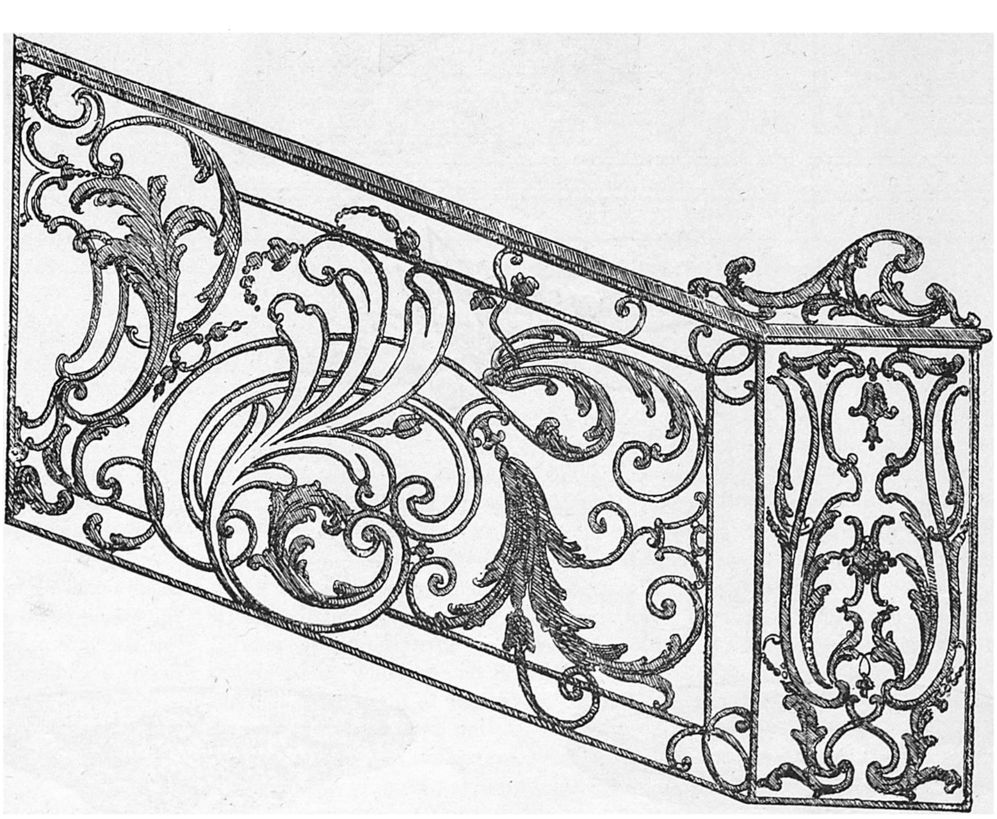
ORNAMENTAL IRON-WORK.



LOUIS XVI. KEY-HOLE PLATE.

In the case of work wrought in iron, as with many other manufactures, it has happened that the desire to produce much and cheaply has brought into common use mechanical processes, such as that of casting, in preference to the direct handwork of former times. The expression of individual human skill and ingenuity has given place to a weak and stereotyped execution, without variety or character, in the same measure as the mould and the chasing tool have supplanted the hammer and anvil. In the Middle Ages, the very poverty of material resources obtainable forced the artisans of the time to develop their intelligence and put it to use. Their work was something more than merely delivering to a machine a bit of iron to have it without more ado converted into the article needed. The mind and the art of a human being were indispensable, and, even if other inducements were wanting, the natural bent of the human intellect toward perfection generally led to improvement, and always to giving to each sample of work a special character. In the matter of iron-work these artistic considerations, of equal weight in all the minor arts, have been so reinforced by practical considerations of strength and durability, that even our terribly practical age has returned to the use of forged instead of cast iron, except in constructions which have to bear mere dead weight or pressure, and not any force of torsion.

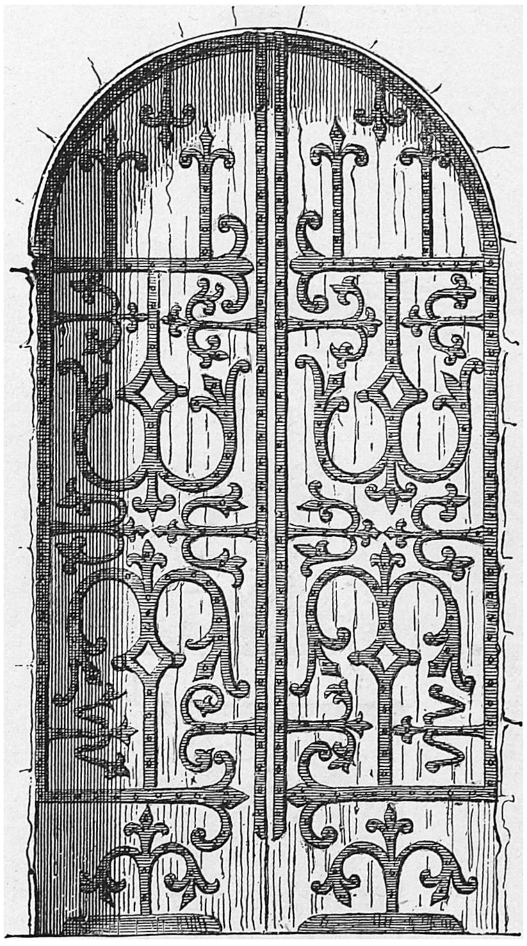
When many castings are taken from the same mould, and not afterward retouched by hand, monotonousness is of course inevitable. At the same time cast-iron is both rude and formless when compared with castings in other metals, and much more when compared with hammered work. This ugliness of cast-iron-work has led architects of our times to hide it with as much care as the builders of former periods took to display it. But happily, of late, matters have taken a turn toward the production of good work that cannot and should not be hidden—work that not only fulfils its purpose, but is pleasant to look upon, and an ornament to that on which it is applied.



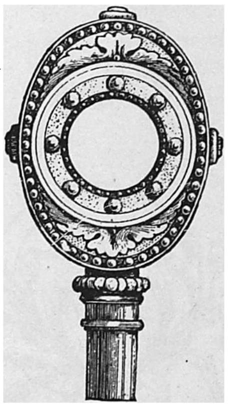
STAIRCASE BALUSTRADE OF THE LOUIS XIV. STYLE.

Of all the many uses of wrought iron the furnishing of a door is perhaps the most important. In Gothic times the work of the locksmith was almost one of the fine arts. His hinges, his locks and knockers, his keys and handles, were often remarkable for beauty. To show the way to those who would now produce similar work, there is nothing better for us to do than to connect our remarks with certain of these antique examples.

All of these that we shall refer to are not equally worthy of commendation. The iron-work, for instance, of a door in the Cathedral of Notre Dame, illustrated on the opposite page, shows a blamable excess of curvilinear ornament, to say nothing of the introduction of the intermediate "false hinges," not attached to the wall. The great number of branches, tendrils and leaflets, is, in itself, a merit, as they serve to bind the hinges more firmly to the door, at the same time that they distribute their ornament evenly over a great part of its surface. But the excessive use of curves gives an appearance of suppleness, which is the reverse of what the work should have. The church door from Orcival is in this respect a much better example. The apportionment of upright and horizontal lines, of straight and curved, is here calculated to give a look of great strength combined with comparative lightness, which is almost a beauty in itself. Such work hardly needs the purely ornamental branches, which the more ambitious artists in this line have so much rejoiced in, and of which the hinge by Gerente, on the next page, is an example.



CHURCH DOOR AT ORCIVAL, FRANCE.



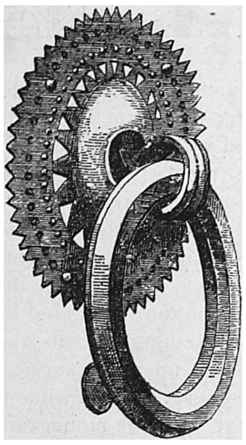
ORNAMENTAL LOUIS XVI. KEY HANDLE.

Of the lighter pieces of locksmiths' work, keys have always been the most curiously ornamented. During the Renaissance it was the fashion to change the handle of the key into a little temple with columns and entablature complete. Simpler and of better taste are the keys of the time of Louis XVI. Rings, symmetrical or eccentric, flower buds, strings of pearls and shells were motives then much in use, as in the example shown herewith. The key-hole plates of the same periods corresponded with the keys in design. The first illustration shows an attractive one of the style of Louis XVI. Both the key and the key-hole plate here given are proper rather to some article of furniture, as a bureau or a desk, than to the door of a house. We wish to return to the latter for a moment, in order to express a regret that the mode of announcement by the knocker should have given way completely to the use of the door-bell. The sound of a bell is of course more pleasant than that of the knocker, but one of the glories of the house front has departed with the banishment of the latter. For garden gates and other places of entrance, where bells would be inconvenient, a simple knocker, like the one illustrated, would be the best thing to use.

Grilles, or railings of small size, are now, once more, often made of wrought iron. An attractive example of such work is seen in the Louis XIV. balustrade, illustrated herewith. Those who have occasion for iron-work of any kind would do well to bear in mind that the tenacity of cast iron is only about one fourth of that of wrought iron. It is only in the case of a crushing weight being superimposed that cast iron, especially if chilled, is of superior strength. The palm of beauty must always remain with the hand-wrought material.

In the foregoing remarks, we have generally reflected the views of Charles Blanc, the great French writer, as to propriety of ornament in iron-work, and our illustrations are taken from his

"Grammaire des Arts Decoratifs." That these views are not always those of other critics, perhaps no less entitled to respect, may be seen from the unqualified admiration by such an art authority as P. G. Hamerton,[*] of "the magnificent original iron-work of the thirteenth century" to be seen on the very Porte Ste. Anne in the Notre Dame Cathedral, which Blanc singles out for adverse criticism. But this is a case probably in which the right of individual preference may be allowed, as no important principle is absolutely violated, but in its application there is simply a difference of opinion as to degree.



OLD FRENCH KNOCKER AT MOISSAC.

The opinions of Dr. Dresser on matters pertaining to design are always valuable, and we can hardly do better than conclude these remarks on ornamental iron work by quoting[†] the following paragraphs from what he has written on the subject:

"Casting is the least artistic mode of treating iron; but if iron is to be cast, the patterns formed should be so fully adapted to this method of manufacture that the mode of working may be readily apparent. It is foolish to seek to make cast-iron appear as wrought-iron; cast-iron should appear as cast-iron, and wrought-iron as wrought-iron. Cast-iron is brittle, and must not be relied upon as of great strength; while wrought-ironis tough, and will bend under great pressure rather than break. Wrought-iron can be readily bent into scrolls, or the end of a rod of metal can be hammered flat and shaped into the form of a leaf, and parts can be either welded together or fastened by small collars, pins, or screws.

"In iron-work the manifestation of a true constructive principle is beyond all things desirable. Iron, being a strong material, should not be formed into heavy masses unless immense weight has to be sustained, or very great strength is required. If we form lamps, candelabra, and such works of iron, it is obvious that the portions of metal employed in their construction may be thin, as the material is of great strength. Were we to form such works of wood, then a great increased thickness of material would be necessary, in order that the same strength be secured, as wood is not nearly so strong as iron."

These remarks, Dr. Dresser says, have special reference to wrought-iron, as cast-iron cannot so fully be said to have a constructive character. He advises the study of the shapes into which simple bars of iron can be beaten, both mentally and by observing well-formed works.

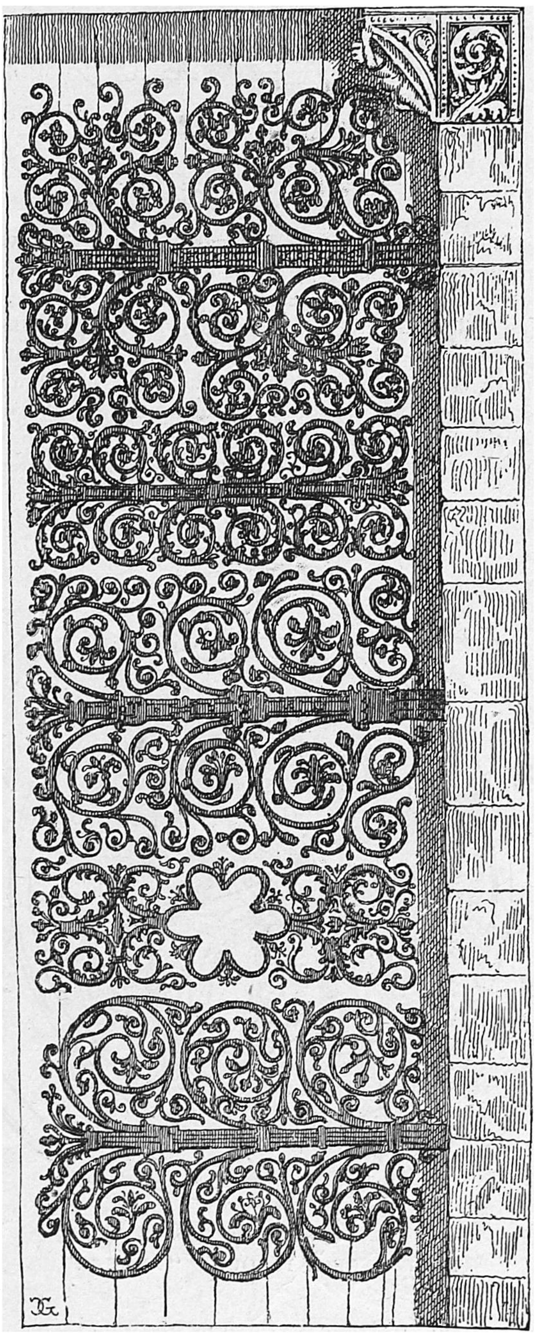
It is pointed out how "brass, copper, and other metals may be associated with iron in the formation of any works. If well managed, brass and other bright metals may act as gems—that is, they may give bright spots; but where the bright metals are used with this view, care must be exercised in order that the bright spots be formed by beautiful parts, and that their distribution be just, for that which is bright will attract first attention."

Gas-branches are so often wrongly constructed that the writer's remarks on this matter should be carefully considered: "A gas-branch is a duct through which gas is to be conveyed. It must be strong if it is to be exposed to pressure, or if it runs the chance of coming in collision with the person, as do standard lights in public buildings. The main part of a gas-branch is the tube or pipe which is to convey the gas, but this may be supported in many ways, as by buttress-like brackets; and if there are branch tubes for several lights, these may well be connected with the central tube, not only by their own attachment, but by brackets of some sort, or with one another by some connecting parts. Whether the gas-branch be pendent or standard, this mode of strengthening the tube work should be employed, for the tubes themselves are but slightly held together, and by pressure being brought to bear upon them, a dangerous and expensive escape of gas may result."

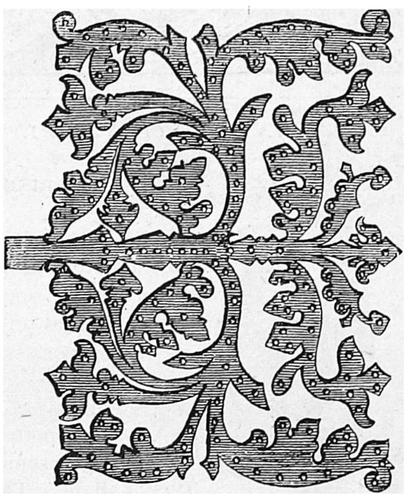
As to coloring of iron, Dr. Dresser approves of the theory of Mr. Skidmore, of Coventry, without attempting to limit the colorist to any theory whereby his ideas might be restricted. This theory is that metals are best colored by the tints of their oxides. When a metal, especially brass, is seen in a furnace in a molten condition, the flames, where the oxygen of the atmosphere is uniting with the vapor of the metal, present the most resplendent tints. The same thing in a lesser degree occurs in the case of iron, but here the colors are less brilliant, and are more tertiary in character. Mr. Skidmore applies to a metal the colors seen in the flames of the furnace where it melts.

THE PROCESS OF CASTING IN BRONZE.

THE process of bronze casting is exceedingly complicated and difficult. Sand is the material used for moulds. Statues are usually cast in separate parts, but a brief description of the way of securing a bronze cast of the bust will indicate the method of the work. Taking sand, moistened often with lager beer, which renders it more sticky, the workmen put it upon the bust until a cake of wet sand is in place, covering perhaps the chest. This dries in position, and then another piece is plastered on, enveloping the front of the neck, and so on until the whole of the bust is encased in pieces made of this wet sand, which dries and hardens in place. Over this first layer made up of several pieces is put an outer shell of sand. The whole mass is then put into a box open on two sides and secured from rolling about by long nails. Here it remains and dries for a time. Very carefully the outer shell and the inner layer are chiselled away from the bust in halves, the interior of which, when fitted together, gives, of course, an impression of the bust. The hollow mould formed by binding together these halves is filled with fine porous sand, moistened and prevented from adhering to the sides of the mould by the use of unguents. This hardens, then the halves of the mould are removed, and a cast is obtained of the bust in sand.



IRON WORK OF THE ST. ANNE DOOR, NOTRE DAME CATHEDRAL.



MODERN ORNAMENTAL HINGE. DESIGNED BY GERENTE.

But the most difficult part of the work is to follow. If the bronze casting is to be a quarter of an inch in thickness, a quarter of an inch is carefully filed away from the whole surface of this sand bust that there may be just that space between the bust and the sides of the mould when the melted bronze is poured in. Moreover, the sides of the mould must be kept at the same distance from the bust throughout to avoid touching at any point. The inner layer of the mould is in several pieces. Into these pieces short nails are carefully inserted, so that one end is buried in the inner surface of the mould while the other will pierce the sand bust and serve as a support. All over the interior of the mould these nails are inserted of exactly the proper length, so that when the halves of the mould are fitted together over the sand bust a space will be left between the mould and the bust of a quarter of an inch. When the bronze is poured in, these nails are melted and disappear.

In the last process, that of making the bronze cast, two precautions must be observed—one, that the air may escape freely; and the other, that the melted bronze may reach the different parts of the mould as nearly as possible at the same instant. Unless this is done the bronze hardens and the cast is imperfect. To secure the general and simultaneous introduction of the bronze, little canals are made in the sand, so that the bronze running down them strikes half a dozen parts of the bust at the same instant. Openings, or "gates," as they are technically called, are made for the escape of the air. After allowing the bronze time to cool and harden, the mould is knocked away and the bronze bust, which incloses of course the sand bust, is subjected to a keen examination, in order to detect flaws or defects. The whole process is necessarily exceedingly slow. Two weeks are required often to cast in bronze a single bust. The mechanical ingenuity, time, skill, and painstaking required, in addition to the skill of the sculptor, go to account for the expensiveness of works of art in marble and bronze.

IN his "Every-day Art," Lewis F. Day says truly: "We could do with much less of substance in modern jewelry and much more of art. In objects of pure luxury like this, we might well afford to spend more money on the craftsmanship than on the mere material on which that is expended. It would be a safe rule to follow, never to let the value of the material exceed the value of the art in jewelry; but that would never find favor with the power that is. Such gems would be worth keeping. They would even increase instead of losing in value. Their price would depend on exquisite design and workmanship; on merit, in fact, and not on any notion of novelty. And that would never do. If we fully realized what fashion was, and who set it, and for what objects, we should surely be ashamed of following it. Until we are, there is little hope of radical improvement in ornamental design." We almost despair of such reform.

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[*] See his "Paris," page 70, in The Portfolio, April, 1883. New York: J. W. Bouton.

[†] Principles of Decorative Design. By Christopher Dresser. New York: Cassell, Petter, Galpin & Co.